Beyond SIR-C /X-SAR

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The science results from SIR-C /X-SAR, although preliminary, point the way to a suite of potential follow-on missions, Multiseasonal data have proven to be extremely useful for testing models for soil moisture, snow wetness, biomass and vegetation mapping. Additional seasonal information provided by a third Shuttle flight would be valuable, particularly for agriculture and forestry (summer flight) and for snow hydrology studies (winter flight). The success of the SIR-C /X-SAR interferometry experiment also suggests that a third flight could not only provide digital topographic maps but could also provide surface change information over areas that are actively deforming.

The SIR-C /X-SAR science team has also identified free-flying missions that would provide long term measurement capabilities using algorithms developed with SIR-C/X-SAR data. For example, a SIR-C /X-SAR Free-Flyer could be implemented by adding solar panels, an attitude control subsystem, and a data system to the existing hardware and leaving it in orbit after a Shuttle launch. This capability would result **in near-global coverage between north and south of about 60 degrees latitude.**

Other potential free-flyer mission concepts include a two spacecraft cross-track interferometer mission (TOPSAT) to map earth's topography and topographic change; an along-track interferometry mission for measurement of ocean currents; and a variable resolution, polarimetric, two frequency mission which would fulfill the requirement for long term monitoring of the planet.